ENVIRONMENTAL EDUCATION IN ALBERTA

The Last Fifteen Years

Alberta

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THE LAST FIFTEEN YEARS

By

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I. INTRODUCTION

> "The important thing to keep in mind is that environmental education is a learning experience which puts the learner in touch with his environment, and that the point of the whole thing is to live well on this planet. When you get right down to it, environmental education is simply good education." (Environmental Education in Alberta Provincial Parks, p. 1)

Over the past fifteen years environmental education has not been ignored in Alberta. Much work has gone into it, by individuals and organizations. But comprehensive documentation and evaluation of these efforts has not been made. Without this information strategic planning for the future cannot proceed.

This report makes a start at identifying where organized environmental education in Alberta has gone over the past 15 years. Its purpose is to describe the leadership and action undertaken during this time by organizations: school boards, teacher organizations, government departments, non-government agencies, educational institutions and the media. No attempt is made to evaluate the success of these efforts.

There is little distinction made among the various kinds of environmental education. Rather it is a description of what has been done "in the name of environmental education". Efforts at all levels of formal education, and in the public forum are outlined.

The historical reference point for this report is the Environment Conservation Authority's (ECA) "First Alberta Conference on Environmental Education" held in May of 1974. Over 200 Albertans attended this conference. They made a series of recommendations for action to sustain and nurture environmental education; directed toward teachers' organizations, government, universities, the media and other agencies. For reference, these recommendations appear in "boldface, parenthesized print" in appropriate sections of this report.

This report was initially prepared as background reference material for educators meeting at another ECA environmental education conference held ten years later, in June of 1984. Delegates to this "Communicating Environmental Trends" conference discussed environmental education past, present and future.

The June 1984 edition was based on the review of several documents and interviews with 33 people who were active over the past fifteen years. This is a revised version of that report, reflecting comments received from most of those who were interviewed for the first edition, and from twenty other people. A list of selected references and acknowledgments to those who provided input appear in Chapters IX and X.

II. GENERAL RECOMMENDATIONS FROM THE 1974 CONFERENCE ON ENVIRONMENTAL EDUCATION

The following recommendations were addressed to all government departments and other institutions and agencies concerned with environmental education.

"i) There should be a general campaign of information and education, using all the appropriate media and sophisticated methods of presentation, to emphasize man's role in the environment, taking a holistic view of the relationships among science, economics, aesthetics, social morality and individual growth.

ii) Environmental education should be concerned with all three modes of learning - intellectual understanding, emotional awareness and actual behaviour (ie. what we can do about it), and with values.

iii) Such learning should be an integral part of educational activities at all levels, ie. kindergarten to recurrent education for adults.

iv) Action should be taken by all government departments concerned, to work in concert with one another and with the ATA (Alberta Teachers' Association) and ASTA (Alberta School Trustees Association) to prepare information and relevant materials for use in the formal education system.

v) Such concerted action should also be taken to prepare relevant information and materials to be used by ACCESS (Alberta Educational Communications Corporation) and other media agencies in their programming outside the formal education system."

III. TEACHER-INITIATED ACTION

A. Individuals - where it started and where it's at

There have always been environmental educators - teachers who took their students outside the classroom, into the schoolyard and beyond. They were doing this long before there was "system support" for such explorations. Fifteen years ago environmental education usually meant one of two things: nature appreciation or outdoor recreation. For either, the teacher was faced with explaining how the activity would benefit students and fit in with the prescribed curriculum.

Outdoor activities happened everywhere in the province but not in an organized fashion. There was no guarantee that every child who completed school would have had such an experience. But there were people who felt it should be universal and that is where this story begins.

Individuals acted in a number of ways: some became nuclei of activity and organized locally, others expanded the responsibilities of existing provincial organizations such as the Alberta Teachers' Association (ATA). Still others sought new support from government. Many of these efforts continue today.

Informal organizing occurred in many parts of the province. During the early 1970s, for example, teachers in Strathcona County organized a local interest group to stimulate and support environmental education. As early as the mid-1960s outdoor camps for Edmonton public high school students were organized at a survival training camp near Blue Lake, west of Hinton. In Medicine Hat, what started out as an outdoor program in one school was soon offered in six others.

Two conditions led to the development of organized programs, often away from the school entirely: school board support of out-of-classroom activities; and the abolishment of departmental exams, which resulted in curriculum diversification.

In St. Albert, the superintendent of the Protestant Separate School Board convened an outdoor education committee. Three teachers proceeded to develop programs and obtain equipment, using board and government funds. What began as a pilot project for six classes in 1972 grew into a $40,000, integrated program for about 2500 students in 1977. Subsequently, the program was decentralized, and it continues today at individual schools.

The St. Albert project had established leadership in environmental education at each school. It had also provided a model for curriculum integration and actual programming that was picked up by others around the province. It is estimated that during this time outdoor camps were a widespread phenomenon, occurring in about 20 jurisdictions and involving 100 to 200 classes annually.

Many people outside the formal education system have been active participants in environmental education in Alberta. Several continue to contribute as individuals, rather than through an affiliation with an institution or organization. There are a number of instructors (in environmental education, outdoor skills and interpretation) who teach interested groups or individuals. They have taught at the Blue Lake Centre, at the three universities as sessional or guest lecturers, and elsewhere throughout the province.

B. School Boards

> "School Boards should ensure the provision of funds for the implementation of environmental education in schools."
>
> "There should be more in-service upgrading of teachers in environmental education."
>
> "Teachers should be provided with incentives for becoming involved in environmental education, such as being given credit for environmental courses which have been attended and completed, and provision of time during school to attend such courses."

- Recommendations from the ECA's "First Environmental Education Conference", May, 1974

1. Metropolitan Boards

The metropolitan school boards have moved to formalize environmental education to a higher degree than most other jurisdictions in Alberta. For both Edmonton and Calgary the pattern of development has been similar. In the early 1970s each public school board had a staff person to coordinate and support local and off-campus activities. Support systems and programs grew substantially in the 1970s and have waned or stabilized in the 1980s.

Edmonton Public School Board

In 1970, the Edmonton Public School Board (EPSB) appointed a consultant to provide assistance to teachers in implementing curriculum-correlated outdoor activities. A 1971 inventory of 100 possible environmental education sites in Edmonton provided the impetus to develop programs. To support this initiative, the Board hired two other consultants, one to assist elementary teachers, and the other to develop secondary science programming.

In addition to providing direct support to teachers in the form of classes or workshops, they helped develop curriculum materials. Some of these were general, such as Children Outdoors: The Schoolyard and Beyond, an introduction to year-round use of the city's parks by elementary schools. Outdoor education kits were supplied to every

school. Other materials were more specific. A series of units on waste, food and energy was prepared by a committee of teachers and consultants. These units were for grades four, five and six and each required six weeks. They were based on the awareness-appreciation-responsibility model.

Off-campus programs have diversified since they began in 1973. They have been extended to all seasons necessitating the purchase of equipment such as snowshoes, skis and orienteering materials. Canoe instruction, part of the Red Cross Small Craft Safety Program, is offered at Swiss Valley, a private facility 45 km. west of Edmonton. Today there is more emphasis on integrated programming and inservicing of curriculum based materials that have been developed at the Bennett Environmental Education Centre.

Environmental education programs have been created for use at Swiss Valley, the Bennett Environmental Education Centre and several other Edmonton locations. Support materials specific to each site have been developed, focussing on geology (Rundle Park), and ecology themes (Swiss Valley, the Provincial Museum and the Muttart Conservatory). These studies emphasize efficient data gathering, pre-field and post-field work. There has been increasing participation in these programs. Swiss Valley now attracts about 75 classes annually, and Rundle Park 50 to 60 grade eight classes. Approximately 40 grade seven groups study the Whitemud Creek beaver habitat every year.

In 1980, the Board unanimously supported acquisition of a site that would provide a range of educational opportunities within Edmonton itself. The Bennett School, originally built in 1912, was selected. It is located in the heart of the city, close to many natural and cultural features and is readily accessible to Capital City Recreation Park which stretches along the North Saskatchewan River. The school was reopened in 1980 and in 1981 a 64-person residence was added.

Although operated by the EPSB, Bennett Centre is available for use by Edmonton Catholic Schools on a user fee basis and by other groups as time and space permit. The Centre includes display areas, multipurpose classrooms, outfitting areas, a large room-sized model of the Capital City Recreation Park area, two accommodation wings and a cafeteria. It provides the opportunity for day long field trips (grades three and up) or three to five day residence programs (grades four and up). The Centre's staff assist teachers in planning and carrying out their activities. Before conducting a residence program teachers are required to attend a planning workshop.

A dozen different program types and about 20 activities are outlined in the teachers' handbook for the Bennett Centre. Residence programs are the first programming priority. In 1983, approximately 5000 students attended programs, totalling about 12,000 student days. Almost 4000 students participated in day courses at the Centre. The use of Bennett Centre has tripled since it opened in 1981 and now it is booked 90 per cent of the time. Many teachers who use this facility emphasize the social as well as the environmental values of experiences gained.

The costs of program development, facility rental (Swiss Valley), operation (Bennett Centre) and consultants have always been borne by the Board. Funds for program revisions and updating have not been available for the past two years. Initially some assistance was provided by the Board on a centralized basis for transportation and teacher substitutes. These requirements are now a school responsibility through decentralized budgets.

Edmonton Separate (Catholic) School Board

In the early and mid-1970s the Edmonton Separate School Board employed a full-time outdoor education consultant. He developed materials for grades one through nine and conducted sessions for teachers and students. Since then no new materials have been produced and outdoor and environmental instruction has been sporadic.

Calgary Board of Education

In 1964, an experimental elementary "outdoor school" program began at one of the Calgary schools. This progam was science-oriented, and featured modular study units (beaver pond, ranch and slough). From that time onward, the Elementary Outdoor School expanded in scope and size. Members of the Calgary Regional Elementary Science Council wrote and tried programs, initially at Camp Kiwanis, west of Calgary. Many of these courses were the basis for programming that was adopted by the Calgary Board of Education (CBE).

By 1967, there were 22 different environmental programs that included inservicing for teachers. The Outdoor School gradually become a year-round residence program held consecutively at Camp Kiwanis, Camp Horizon, Silver Creek Ranch and the Yamnuska Centre. A variety of teaching materials have been developed for on-site use.

In 1981, it was moved to the Yamnuska Centre, owned and operated by the Calgary YMCA. Six trained staff, high school counsellors and transportation were provided by the Board. Accommodation costs were highly subsidized. Since 1983 the program has operated on a user pay basis; with travel costs and the salary for a program coordinator still covered by the Board. The Centre has a program director and three qualified staff who assist teachers when they bring their classes out. In 1983, approximately 4000 grade six students (about two-thirds of all grade six students in the system) used this facility. During the spring of 1984 about six hundred students participated in the one week "Sunship Earth" program at Yamnuska, a program highlighting environmental and ecological concepts. Many of the Outdoor School programs have included high school students who have been trained as counsellors, and parents who have been trained as teaching assistants.

The Outdoor School has not been the only environmental program offered by the CBE. In 1974, the Board appointed its first outdoor and environmental education curriculum specialist. He took over responsibility for the Outdoor School, teaching environmental education

and inservicing of teachers. Several teachers of the Calgary Regional Elementary Science Council assisted with inservicing from 1967 to 1978.

During the 1970s there was a surge of curriculum development in the physical education program. Ninety-seven supplementary curriculum packages were prepared, including 15 on outdoor pursuits. Several of the outdoor pursuits programs included environmental themes. For example, the three levels of orienteering include "project orienteering" in which each station provides the opportunity to examine some aspect of the local environment (eg. pollution levels, land use).

An energy literacy program was developed for kindergarten to grade 12 (K to 12) during this time. This included four manuals and inservicing for all grade levels. These resources were not promoted beyond the Calgary system. In 1980, the Board established an energy office to promote efficient energy management throughout the system.

In 1980, the CBE published the Position Paper on Environmental Education for the 1980s. In this, the Board reiterated the need to provide system-wide access to suitable locations, and recommended that a site be acquired.

Currently there are three staff persons to assist teachers in the planning and scheduling of off-campus activities. The Board recognizes that education takes place outside the classroom, but that field trips must be educationally justifiable, cost effective and safe. In 1983, this office facilitated 370,000 student moves (for at least a half day) during 14,000 trips. During peak times up to 200 trips were occurring daily. Twelve trips were taken outside Canada by junior and senior high school classes. Over 160 destinations in Canada were involved, including ten winterized facilities in the Calgary area.

The Board also has had a representative working with those who own or operate other educational resources in Calgary (eg. city parks, stables, rodeo grounds, historic buildings, natural areas), to help them provide meaningful experiences for school classes and other visitors.

2. Other Jurisdictions

A 1981 Alberta Education study found that most school jurisdictions had stated policies and regulations regarding environmental/outdoor education and other out-of-school activities. Most of those surveyed also provided funds for these activities and received support from parents and the community to carry out these programs.

Largely as a result of individual efforts, many school jurisdictions outside the metropolitan areas have consistently provided outdoor/environmental education. For example, the Medicine Hat School District has had an outdoor program with heavy emphasis on environmental protection and appreciation since 1969. Now every grade six student spends two and a half days at a camp in Cypress Hills Provincial Park.

About 450 students attend the program which runs during late May and June. This program has enjoyed continuing support from the school board, in terms of transportation, substitutes and camp management. One in-service session for teachers, to assist them in preparing their own programs, is held annually.

Similarly, every grade six class in the County of Barrhead has a full week at an outdoor education camp at Long Lake (near Athabasca), and in addition, grade five students have the opportunity to spend a week in the Okanagan Valley. Red Deer County has had programs at Goldeye Lake for many years. In 1981, eight southwestern Alberta school districts identified the need for a variety of facilities to meet their outdoor education needs. The use of school property that is close to natural areas is being examined in the Counties of Parkland and East Smoky.

C. The Alberta Teachers' Association

During the early 1970s an informal network of environmental educators gradually emerged. As interest grew workshops were organized to provide support and to allow people to talk with others in other parts of the province. One such event was an inservice environmental education seminar held at Camp Caroline, west of Sundre, in 1975. Alberta Recreation and Parks, and Alberta Education sponsored this event. Over forty people attended.

Although the idea of a specialists council was in the minds of several when they met at Camp Caroline, it wasn't until a year later that the Environmental and Outdoor Education Council (EOEC) was formed. Membership in the Council peaked at 553 in 1980 and has been declining since, to 307 in 1984. In 1984, there were twenty specialist councils of the ATA, 13 with a larger membership than the EOEC.

A primary goal of the EOEC is to facilitate professional development and communication among educators. It has attempted to meet these objectives by organizing workshops, courses, annual conferences, and by distributing information through publications.

The Council has spawned two regional councils, the Lakeland Regional (1979-1982) and the Southern Alberta Regional (1980). These regionals have focussed on teacher inservice and information dissemination.

1. Workshops

Leadership training workshops have been sponsored by the EOEC at least annually with attendance ranging from 15 to 40. Two "mini workshop" series have also been staged. The first was held at the Kananaskis Centre in 1976 and focussed on four types of environmental studies (watersheds, remote sensing, snow and ice). It was well attended. Another series was held in 1979 in Drumheller, Lethbridge,

Edmonton and Fort McMurray It emphasized outdoor activities, nature interpretation and nature trails.

In recent years workshops and mini-conferences have not been well attended. The council executive has noted that teachers seem less likely to attend because they have fewer funds available to them and more committments.

2. Conferences

The inaugural conference of the EOEC was held in March 1976. The conference linked concepts of a conserver society to environmental education. It was attended by 200 teachers. There have been annual conferences held every year since then, with attendance ranging from a low of about 100 (1984) to a high of 340 (1980).

In 1981, the Lakeland Regional Council of the EOEC (St. Paul-Lac La Biche) sponsored a conference on energy that drew 110 participants.

The Science and Early Childhood Education Councils, and others, have promoted environmental education through sessions held at their annual conferences.

In October of 1984, the North American Environmental Educators Conference was held in Lake Louise, attracting 350 delegates from over 25 countries. EOEC members and other prominent educators were part of the Alberta organizing committee that was responsible for staging this event, arranging for local field trips, and on-site activities.

3. Publications

Since 1976, the EOEC has published three or four newsletters, and one or two journals every year. The newsletters have highlighted events and activities of interest to teachers. During the late 1970s, the newsletter contained up to 70 pages of information.

The Science Council has also included related material in its journal from time to time.

4. Position Paper on Environmental Education

In the spring of 1978, the EOEC council produced a nine page position paper that focussed on establishing "environmental literacy" from K to 12. It stressed the importance of creating awareness of environmental interrelationships, impacts and responsibilities. Teaching environmental education was related to the four "R's": reality, relevance, responsibility and relatedness. The need for environmental education was substantiated by means of a number of statements and recommendations made by public figures and experienced educators.

The EOEC paper identified the role of schools in promoting an environmentally literate society.

> "The Curriculum Policies Board [of Alberta Education] identifies environmental concerns as a need of society and a broad goal of education to be met by the entire community rather than by the school alone. ... The schools do not have sufficient resources for meeting their responsibilities in achieving their share of the task of developing a committment to environmental concerns. Yet few if any other themes offer the opportunity which environmental themes afford for integrating knowledge, skills, and attitudes and uniting activities across the various goal and subject areas within the Alberta Curriculum. Thus, both from the standpoint of the broadest goals of education and also the more immediate goals of schooling, environmental education is both a legitimate concern and a unique opportunity for the school."

The position paper concluded with seven recommendations. Many of these were directed to Alberta Education and related to integrating environmental education into the existing system.

(1) Alberta Education, as the proper authority for coordinating such efforts was advised to "appoint a full-time coordinator for the tasks of developing a general environmental education perspective and providing useful supplementary information for teachers."

(2) The Council specified that the full-time coordinator should develop an outline plan for inclusion in the Program of Studies.

(3) The Council recommended that certain factors should be taken into account to ensure that these efforts be optimally effective. These factors were: relation to and degree of fit with the provincial goals of education, appropriate themes at different stages of educational development, and opportunities for environmental education within the existing curriculum.

(4) "Alberta Education should ensure development of an environmental education curriculum guide supplementary to the approved outline plan and integrating environmental education within present K-12 subjects." The resulting materials were seen as service-oriented rather than prescriptive.

(5) The Council recommended that these materials should be widely advertised and distributed.

(6) It also addressed the issue of inservice training. "Alberta Education should coordinate a program assisting teachers to increase their skills in teaching environmental themes. The program should include use of resource people from various agencies, employment of

seminars, workshops and financial assistance from interested agencies to enable teachers to participate."

(7) The Council ended by stating that "Alberta Education should allocate funds for the development and adaptation of materials integrating environmental themes with the present curriculum.

In the fall of 1978, members of this Council presented their position paper to the Minister of Education, the Honourable Dave King. The Minister replied by letter a year later, stating that his Department was willing to proceed with the designation of an Environmental Education Coordinator.

5. Networking

The EOEC has provided a forum and network for government agencies and outside groups. Some Council members have been resource people and workshoppers for programs developed by government departments, such as Alberta Environment. The annual conferences have provided environmental groups and private individuals with opportunities to present their environmental perspectives.

6. Liaison

Four ATA directives urging the Department of Education to act on environmental education matters were passed by the ATA Annual Representative Assembly in 1978. Of these, two regarding support for materials and teacher training, were dropped in 1979. The other two, concerning the environmental education outline plan and the supplementary curriculum guide, were reaffirmed each year until 1982 by which time they had been achieved. A resolution, stating that the ATA urge Alberta Education to coordinate an inservice program, died on the order paper in 1980.

Two 1979 resolutions advocating that: (1) the Government of Alberta establish and maintain funding for environmental education (with emphasis on resource materials); and (2) environmental education be integrated with the present subjects studied at all levels of basic education, were passed and presented to the Alberta government. In 1984 nothing relating to environmental education was under active consideration by ATA members.

Other specialists councils, such as the Science Council and Physical Education Council have highlighted environmental education in their publications. The winter 1983-84 edition of <u>One World</u>, a publication of the Social Studies Council of the ATA, presented the experiences of teachers who participated in the "Educating for Environmental Action" program at the University of Alberta, and articles commenting on this program.

IV. GOVERNMENT'S RESPONSE

Some government agencies in Alberta have been torch-bearers for environmental education. There have been attempts, both formal and informal, to coordinate their efforts. Some agencies have concentrated on outlining policies and official responsibilities. Others have focussed on action: direct involvement with students and teachers, the production of support materials and/or the distribution of funds.

Fifteen recommendations from the May 1974 Conference on Environmental Education addressed the role of government. Seven of these related to coordination among government agencies and with other sectors of society.

> "Some agency or machinery should be established to oversee and coordinate the resources now available for environmental education. ...An agency should be established to act as a repository and clearing house for resource materials and should be capable of evaluating the effectiveness of such materials. ...Coordination among government departments, learning institutions, industry, and all interested groups should be designed to avoid cross-purpose efforts in the solution of environmental problems."

> "Appropriate departments should cooperate to develop and operate environmental education field centres, and for the training of school teachers and others in their use."

> There were recommendations for the two education departments. "The Department of Education should work to prevent overlaps and gaps between local school systems. ... The Department of Advanced Education should encourage the expansion of education programs for the public through all post-secondary institutions."

The conference delegates also highlighted curriculum development. They recommended that it should be interdisciplinary, and have both theoretical and practical elements. The theme of coordination was emphasized again:

> "There should be an advisory board to further the formulation and coordination of curricula at all levels in the formal educational system."

> There were recommendations regarding financing:

> "Government funding should be made available to interest groups which educate through action, to enable them to train resource persons and expand activities. ...Such funds should be available for programs at local and provincial levels, and should include the costs of accommodation and of travel for school groups using field centres."

A. Interdepartmental Coordination

> "Some agency or machinery should be established to oversee and coordinate the resources now available for environmental education. ...Such an agency should work with public education agencies and outside resource facilities, such as Waterton Park, to examine the establishment of study programs by such outside resources."

Since the early 1970s there have been several attempts by provincial government departments to coordinate environmental education. There have been numerous examples of cooperation, involving funding, sponsorship, development of materials and workshopping. But efforts to establish overall coordination have not yet been successful.

In 1973, the Minister of Environment authorized the formation of an Environmental Education Coordination Committee. It was restructured in 1975 to represent seven departments and to report to the Minister of Education. The Interdepartmental Committee for Environmental Education (ICEE) had three main functions: to make recommendations on environmental education; to provide a forum for the exchange of ideas and information; and to offer technical and operational advice.

In 1977, the ICEE presented A Proposal for Environmental Education to the Minister of Education. It recommended that a "deliberate policy of active support for environmental education through a coordinated, multi-disciplinary approach" be developed. A three-year, $1.5 million plan of action was proposed, including the following activities.

(1) Alberta Education:

a. Develop and distribute a curriculum plan for K to 12 showing where environmental education can be integrated into the existing curriculum.

b. With the help of other departments, sponsor workshops and other training to upgrade teachers.

c. Focus on developing learning materials for the elementary grades, with the help of other departments.

d. Hire at least one person on a full time basis to coordinate the development of environmental education curricula and materials.

(2) Alberta Environment:

a. Promote environmental awareness by showing how individual actions affect the environment and how people can positively reduce negative impacts.

(3) Advanced Education and Manpower:

a. Encourage and facilitate institutions of advanced education and Further Education Councils to offer courses on man-environment relationships and current environmental issues.

(4) Government Generally:

a. Set up a Grants-In-Aid program to assist teachers and schoolboards in developing and testing environmental education curriculum and resources.

b. Institute a system to ensure optimum use of crown land, and existing and planned facilities.

c. Outline long range environmental education goals, activities and priorities for Alberta.

The Committee decided to become inactive until there was response to these recommendations. It did not reconvene. From 1978 to 1982 there was informal communication between some departments. Cooperative efforts among Alberta Recreation and Parks, Alberta Energy and Natural Resources and Alberta Environment over the past two years have been extensive.

In 1982, another interdepartmental committee was formed at the direction of the Ministers of Education, Environment, and Recreation and Parks. It was to report on the status of environmental education in Alberta and make recommendations for future development. The report from this group, Environmental Education: A Heritage is presently being considered by the three ministers.

It recommends that a Committee on Environmental Education be established to prevent duplication of effort and to enable departments to clarify their roles. A major task of this committee would be to prepare a "Futures Plan" directed toward orderly development and cooperation among all agencies involved in environmental education.

B. Alberta Education

1. Policy Statements

At the 1974 conference, a draft position paper on environmental education was presented by the Alberta Department of Education. It was described as a tentative statement designed for discussion purposes only. However unofficial, it did form the basis for further department action and for the formation of the Interdepartmental Committee on Environmental Education (ICEE). "The position of the Alberta Department of Education is that environmental education must be given a high priority in terms of policy and program development, dissemination, and implementation."

The paper went on to outline three ways that this policy could be reflected in the curriculum.

(1) In the short and long terms, "environmentally sensitive" components of existing courses in all disciplines could be modified to reflect the increasing priority of environmental education.

(2) The curriculum could be restructured into "core" and "option" modules so that interdisciplinary environment modules could become part of the "mix and match" approach to program definition.

(3) The curriculum could be restructured to obliterate disciplinary distinctions.

The document stated that the Department considered the "core-option" modular approach the most viable long term approach, but that upgrading of the current curriculum in the short term was a primary curricular policy, especially in social studies, physical sciences and physical education.

The document outlined the areas which would require financial support and noted that this facilitation need not depend on the Department of Education. It was felt that environmental education was a broader concern involving all levels of government, private industry and society at large. Overall coordination of activities was identified as a major requirement.

> "It is clear that the development of programs, and approval of materials for use in the schools is the legal responsibility of the Minister of Education, or local school boards. It follows that the Department of Education should be among those responsible for the coordination of developmental and facilitative activities in environmental education."

The policy paper suggested that another way to provide coordination would be through an interdepartmental environmental education coordinating committee. The existence of such a committee would demonstrate the importance government places on environmental education. In addition, it would provide continuity, authority and momentum in implementing environmental education and help identify where funds were being spent. The policy paper went on to identify three operating conditions for effective coordination by such a committee.

The policy paper concluded with five statements describing the implications for all groups participating in environmental education.

(1) The Minister of Education carries the responsibility for the development and implementation of environmental education programs in elementary and secondary schools.

(2) Teachers must appreciate the importance of environmental education in the school setting and appropriately handle it in an interdisciplinary fashion.

(3) Those responsible for formal education should be asked to be only partially responsible for the attainment of the goals of environmental education.

(4) A relevant context must be established before environmental education in the schools is truly meaningful for students.

(5) Cooperative action by government and non-government people is essential for environmental education.

Since 1974, policy statements endorsing the integration of environmental education into all elements of the curriculum have been approved by the Curriculum Policy Committee, advisory to the Minister. There has been no direction given to administrators or board members regarding environmental education.

2. Direct Funding

For over twenty years the Department of Education has provided funding for innovative education projects through the Education Opportunities Fund (EOF). In the early 1970s, some teachers used these monies to carry out environmental and outdoor progams (eg. St. Albert Protestant Separate School Board referred to in section III.A).

3. Environmental Education in the Curriculum

Environmental concerns have been included in the Program of Studies, the mandatory statement of curriculum content. Each core subject area is seen to incorporate environmental education, and elective units are also identified. Curriculum guides further clarify and extend statements of the Program of Studies. These contain more specific instructions and examples relating to environmental topics, particularly for social studies and science. "Outdoor Education" is a B-option for junior high students.

In the early 1980s, an Environmental Education Coordinator was employed to complete a supplementary environmental education manual and catalogue of resources. From 1981 to 1983 he developed two curriculum supplements on environmental education: Environmental Education Manual for Grades I to XII and Environmental Education Catalogue of Resources for Grades I to XII. These service documents were published in 1983 and distributed to all schools in the province. The cost of their development and production was about $150,000.

The 44 page manual attempts to identify curriculum content which appears "to be related, directly or indirectly to concepts in environmental education." For each grade, appropriate environmental themes and objectives are identified and linked to topics, concepts or activities in the ten strands. There are foldout charts illustrating these relationships and accompanying case studies demonstrating how the chart and the resource catalogue can be used.

The catalogue contains alphabetical listings of print materials, a wide variety of non-print resources and physical resources available to support teaching environmental education. Both the catalogue and manual are now out of print.

No instructional units and inservicing, similar to the Social Studies Kanata Kits, were prepared for the environmental education manual and catalogue. During the time that these materials were being produced a newsletter was sent out to all schools outlining progress in the project and information on other environmental education developments in the province.

Since the Environmental Education Coordinator's position expired in 1983, the responsiblities for liaison and communications in environmental education has returned to the Associate Director of Curriculum for Math and Science.

In the spring of 1984, Alberta Education initiated a review of secondary school programming. The Department published the results of this review early in 1985, in three separate booklets representing: the basis for research, the report of the minister's advisory committee and the responses from the public. Environmental education is not addressed directly in any of these documents, which will form the basis for revisions to the School Act.

4. Program and Material Development

Alberta Education has attempted to support integrated environmental education in two specific ways. In the late 1970s work began on developing a natural resources management program for high school called "Land and Life". Alberta Education also sponsored the production and distribution of the Alberta Flora and Fauna Kit with monies from the Heritage Trust Fund.

In May 1975, the Secondary Curriculum Board of Alberta Education approved the development of a new secondary school program to replace the junior high Agriculture A-option and senior high agriculture, forestry and horticulture courses. "Land and Life" was intended to focus on the environmental aspects of resource management in Alberta. It would also introduce the students to careers related to agriculture, forestry, horticulture, energy and the environment.

The course at the grade nine level would strive to increase environmental awareness by examining environmental issues and topics of local interest. It would be formally introduced at the grade ten level with a general introduction to the physical and biotic environment of Alberta. The grade 11 and 12 courses would offer choices in five areas of study (Alberta's resources, land use and ownership, agriculture, forestry and horticulture). There would be an optional fieldwork component.

A committee of government department repesentatives worked to develop this curriculum proposal. In 1982 a status report, Land and Life Program - A Prospectus for Development, was issued. It outlined the proposed course of study, the need for learning resources to support this program and a plan by which the support materials could be produced, largely through interdepartmental cooperation (there were very few appropriate materials commercially available).

There has been no further work done on "Land and Life" due to lack of financial committment to produce the resource materials required to support the program. Efforts are now underway to rejuvenate the high school agriculture, forestry and horiculture courses it had been designed to replace.

In 1979, Alberta Education produced and distributed the Alberta Flora and Fauna Kit to every elementary and high school in Alberta. Each kit consisted of 24 coloured study prints, 640 slides of flora and fauna of Alberta and instructional guides. A series of six films complemented this collection. The Department provided inservice workshops on a limited and invitational basis in June 1979. Since 1979 Alberta Education has funded additional production of slides and films relating to the content of the Flora and Fauna Kit.

5. Research

As part of his responsibilities, the Environmental Education Coordinator conducted a survey of environmental educators to determine the constraints to environmental education in Alberta. These were published in 1981.

C. Alberta Environment

1. Early Information Services and Funding

Since its formation in 1971 Alberta Environment has been actively involved in environmental education, primarily through the efforts of its Communications Branch staff. Some of their activities have focussed on formal education, while others have been directed to the general public.

In the early 1970s, the Department concentrated on providing the schools with pollution kits, "fact sheets", films, audio-visual presentations and textbooks. The Communications' director was part of the Alberta Education ad hoc science curriculum committee which was attempting to identify environmental themes in courses of study. Schools also made use of a speakers' bureau organized by Alberta Environment.

The demand for environmental information appeared to be great. In an attempt to address this need, the Department hired a consultant in 1973 to study the feasibility of setting up an Alberta Environmental

Information Foundation. This independent agency would be a referral centre for environmental information and resources as well as a granting body for environmental projects. The recommendations for this independent agency were never acted upon.

The Department kept in contact with environmental groups, and in some cases aided them in their educational endeavors. For example, Alberta Environment funded the University Women's Club ecology caravan which toured Alberta communities and parks in 1972 and 1973. In 1974, the Department distributed grants to Outdoors Unlittered to establish anti-litter progams in Alberta (this continues today); to Save Tomorrow, Oppose Pollution (STOP) to produce a film series on pollution in Alberta; and to the Calgary Eco-centre for its education programs.

As a public service, Communications published and distributed Environment News, a 12-to-16 page newsletter highlighting news items relating to pollution, resource management and activities of the department. Its circulation increased from 3,000 in 1971 to over 5000 in 1978.

2. Taking an Active Role in Environmental Education

Planning

In 1976 Alberta Environment commissioned a study to examine how the department could best contribute to environmental education in Alberta. The conclusions were published in Environmental Education Project Final Report of a Five Month Pilot Project. The author of the report noted that the Department of Education had not yet drafted curriculum guidelines for a K to 12 scheme of environmental studies. She recommended that Alberta Environment proceed to meet the expressed needs of teachers. She outlined the rationale for an environmental education program, how it could be carried out and what materials could be developed.

A possible Departmental mandate in environmental education was presented in this report. "The primary reason for Alberta Environment to actively pursue an environmental education program is the need to PROMOTE UNDERSTANDING OF THE HUMAN ENVIRONMENT. ...The Department recognizes that there is a need to develop a profound awareness of environments and also to equip students with the skills to both explore and protect their environments. The fact that we live on a FINITE planet is considered a crucial concept in any educational program."

The report sketched out the role of an " environmental education coordinator". It emphasized the importance of personal contact with teachers, through school visits and workshops and provision of relevant support materials.

Alberta Environment's Environmental Education Coordinator

The position of Environmental Education Coordinator in Alberta Environment was created in 1976. In the last eight years three people have held this position. They have taken Department programs from the initial emphasis on sensitivity and appreciation to a more diverse approach encompassing responsibility and action. This development reflects the actual model of environmental education for K to 12 outlined in the 1976 Environmental Education Project report.

1976 to 1979

In 1976, the first Environmental Education Coordinator was hired by Alberta Environment. He met the expectations of the 1976 report by making personal contact with teachers through school visits and workshops and by developing many useful resource materials, some of which are still being used today. Demand for workshops was high. From 1977 to 1979 over 140 teacher workshops in various parts of Alberta were conducted.

1979 to 1982

The three-year tenure of the next coordinator, beginning in 1979, gave new dimensions to the position as more contacts were made with teachers and the general public, and new curriculum units were developed.

In 1979, the Department, in consultation with Alberta Education embarked on a program that engaged teachers to prepare specific learning units. Work commenced on seven units: schoolyard studies, urban environment studies, green plants, the aspen parkland, water studies, sensory awareness and the rodeo. The coordinator continued to give workshops to teachers. In addition, many other teachers throughout the province were contracted to provide similar workshops when required.

In 1980 the program expanded its services beyond formal education. Speakers were sent to women's groups, service clubs, community groups etc. to promote a deeper understanding of environmental issues. With the assistance of trained teachers, a total of 102 workshops were completed during the academic year and another 34 requests were turned down due to lack of manpower. The Schoolyard Seasonal Map education unit, approved by Alberta Education as supplementary curriculum material, was distributed to schools. Two resource documents were published: Alberta Government Environmental Resources Materials Guide and Environment Education Publications. The Environmental Education Coordinator arranged for Amory Lovins, author of Soft Energy Paths, to speak in Edmonton. She was also involved in the planning for the Human Side of Energy Forum held in August of 1981.

In 1981, more than 85 workshops for teachers were conducted by the environmental education coordinator and teacher consultants. There were 3,000 inquiries for information from educators and/or educational

institutions. Work was completed on two learning units: Winter Here and Now (was distributed) and Green Plants, (these comprehensive units were piloted, and some were used as handouts). Recycling posters were distributed to schools, liquor stores, supermarkets and the public. Preliminary work was done on the "Educating for Environmental Action" program, a credit program for university education students that examined taking environmental issues beyond the "awareness" stage to "action".

1982 to the Present

Since 1982, the emphasis of the Branch has been on producing units for study and developing a network of workshoppers. The focus of Department programs has shifted from strictly "awareness" to that of achieving responsible action and stewardship. This "process" approach parallels that used in school curricula and leadership training programs. Using this model of program development, the Branch hopes to address some of the issues and services of the Department. A committee of Department personnel has been organized to advise on program change and expansion, in support of this initiative.

The Biology 20-30 Water Quality Monitoring Education Program, developed in cooperation with the Water Quality Control Branch of Alberta Environment was piloted in 1982-83 by seven teachers. In 1984, it was used by 30 teachers. The first six units of a solid waste management education program, developed with the Waste Management Branch were tested in 1984. Planning for a "water literacy" program for grades four to twelve is expected to begin in 1985.

Workshops are now available and conducted by 15 workshop instructors who have been recruited through the ATA Environmental Education and Outdoor Education Council.

Alberta Environment has continued to sponsor environmentally related conferences and courses. In March 1983, the Department sponsored a conference for 45 invited delegates at the University of Lethbridge to discuss credit programming in environmental education at universities and colleges.

Alberta Environment also sponsored pilot courses at the University of Alberta, Unversity of Lethbridge and Blue Lake. The U of A program, "Educating for Environmental Action" was held in the fall of 1983 and had an enrollment of 13 teachers from various parts of the province. It was instructed by faculty members in the elementary science and social studies departments. An 11 day experiential program, "Nature as Classroom" was attended by 15 teachers at the University of Lethbridge in the summer of 1983.

3. Environmental Publications

In 1978, Environment Views replaced Environment News. It was different from its predecessor in format and content. Each issue

focussed on a relevant environmental topic and presented a variety of perspectives. In addition, a students' guide was produced so that the magazine could be used as a resource in high schools.

Environment Views has received wide interest and its subscription list has grown to over 12,000. It has received many positive comments and dozens of requests to reproduce articles from it or to obtain back issues (some of which have had to be reprinted). In 1980, Environment Views was identified by Alberta Education as a supplementry learning resource for use in social studies, particularly at the grade nine and eleven levels. Workshops on the use of Environment Views are available for teachers. Beginning in June 1985, the magazine will be published quarterly. A survey of its readers is planned for the spring of 1985, to determine its effectiveness.

Current publications available from the Environmental Education Branch of Alberta Environment are intended to assist formal and non-formal educators in accessing information and resources. Four of these publications are: Environmental Education: Government Services for Teachers and Leaders, Environmental Fact Seekers Guide, the Focus on Environment Series (a series of short descriptions on current environmental topics), and a descriptive calendar of credit courses offered in Alberta.

D. Alberta Recreation and Parks

Over the past fifteen years the government agencies responsible for "outdoor recreation" and "parks" increased their involvement in environmental education in Alberta. In late 1983, after a rigorous evaluation of its involvement in environmental education, Alberta Recreation and Parks has decided it can no longer assume a lead role; but rather an active support role.

1. Outdoor Recreation

Research and Policy

In the late 1960s, Alberta Recreation and Parks conducted a survey of activities undertaken by schools at the various camps around the province and provided this information to interested teachers. This marked the beginning of cooperation among outdoor and environmental educators.

About 1970, the Department drafted its first policy on outdoor education. It provided the rationale for the piloting of outdoor education through a school grant program. Today the Outdoor Recreation Branch of Alberta Recreation and Parks (ARP) interprets its role in environmental education very broadly. Its position is that schools and associations are an important link in promoting outdoor education which in turn leads to responsible outdoor recreation.

Funding

Since 1967, assistance for formal education has been given in a number of ways. Under Alberta Culture, Youth and Recreation, an environmental education grant program was initiated in 1967. This provided seed funding to school jurisdictions for teacher training and program development. Each board or district that submitted a proposal received up to $4500, distributed over three years. An annual report of the activities and progress was required for each project. During the early 1970s, about a dozen jurisdictions were funded yearly, but this number more than doubled by 1977. This School Outdoor Education Assistance Program was phased out in 1980, when funds for this program were directed to "Outdoors Alberta", a mobile leadership development unit.

The Recreation Division has provided ongoing support for ATA specialty council activities, such as partial funding of annual conferences and teacher workshops. For example, in the early 1970s, it co-sponsored a pilot workshop at the Alberta Outdoor Education Centre at Blue Lake. Following this, many more were conducted throughout the province. In 1980, ARP funded a mobile library, "Resource Centre on Wheels", developed by the EOEC.

Programs and Program Support

In the 1970s, a Department consultant worked with the various outdoor recreation associations to determine their needs for funds and leadership training. This work provided the basis for a funding program, which has grown over the past ten years. In 1971, grants totalling $1500 were given to four associations. In 1980/81 22 groups received $139,500. Several of these groups, such as the Alberta Wilderness Association, Federation of Alberta Naturalists, and the National and Provincial Parks Association, provide environmental education.

In 1981, the "Outdoors Alberta" van took to the road. Since then, with three teaching staff and appropriate outdoor equipment and resource material, it has travelled about Central Alberta. It provides support to teachers and community leaders through workshops and activity sessions with students. During its operation, "Outdoors Alberta" has made over 2000 contacts per year. In 1984, the van piloted a program in Provincial Parks, supplementing existing interpretation programs.

The Department has also encouraged recreation and parks boards to cooperate with schools to facilitate meaningful use of their areas. The Urban Parks Program, announced in 1979, provides yet another opportunity for this cooperation.

Another major "boost" to environmental education in Alberta has been the Blue Lake Centre, developed and operated by Alberta Recreation and Parks. Since its opening in 1971, the Centre itself has offered outdoor recreation leadership programs for the general public rather than environmental education for specific client groups. However, it

has been the site of a number of environmental education courses sponsored and conducted by other agencies.

Blue Lake was the site of pilot teacher training workshops in environmental education, co-sponsored by the A.T.A. Social Science Council in 1971 and 1972. The purpose of these was to identify what areas were of interest to teachers, and who could provide them with information. There was good response to these two one-week courses.

Expansion of the facilities in 1974 included teaching labs and facilities for audio-visual production and presentations, making the Centre more suitable for environmental education programs.

Two environmental study techniques workshops attracted 32 teachers in 1981 and '82. "Nature as Classroom" was organized and sponsored by Alberta Environment. Six experienced environmental educators conducted the course. It concentrated on practical approaches to teaching and integrating environmental awareness, concepts, inquiry and action. Similar courses are not being planned by ARP.

Blue Lake has hosted closed inservice sessions, such as an orientation course in outdoor education for the Yellowhead Division teachers in 1982 and 1983.

Publications

The Recreation Develoment Division has produced print materials that fall into the category of "environmental education". The production and funding of "Alberta Outdoors", an insert to EXPLORE magazine, began in 1984. It is intended to make people aware of agencies, groups, and resources in the environmental and outdoor fields. This was distributed to the magazine's 8500 subscribers plus another 1000 people.

The Division has also published several educational brochures including a series on environmental impacts and outdoor safety. These have been distributed to schools. From September 1983 to April 1984 the Division sent out 31,000 pieces of information, mostly to schools.

2. Provincial Parks

Early Efforts

The growth of environmental education in Alberta provincial parks has followed a similar pattern to that of other agencies. In the mid-1970s, there was an emphasis on sensitizing parks personnel to environmental education. Field and regional level training of interpreters was provided. An Environmental Education Guide for Use in Alberta Provincial Parks (1978) provided teaching strategies for those carrying out environmental education programs.

Parks' personnel participated in workshops for teachers during this time. They also cooperated in the production of materials with other agencies. For example, a "Green Plants" unit was produced in cooperation with Alberta Environment.

Research

From 1980 to 1982 there was rapid growth of the parks system. During this time an extensive market analysis was conducted to assess the status, supply and demand for environmental education programs and facilities. Almost every school jurisdiction was surveyed. The result was Environmental Education Market Analysis - A Provincial Overview published in 1983. This has provided a valuable basis for planning park facilities and services that appropriately further environmental education.

Program Support

Since 1982, Alberta Recreation and Parks has attempted to standardize the delivery of all services, including those involving environmental education. Parks staff have been available to consult with teachers and to orient teachers to the facilities and features within the parks. As well, resource materials for teachers and group leaders have been developed, for specific parks and for general reference. In 1984, a 120-page learning resource manual on Cypress Hills Provincial Park was completed for teachers of grades four to six students. It contains resource information about the park, suggestions for activities and data sheets. Similar manuals for use at Lesser Slave Lake and Dinosaur Provincial Parks, and a general activities guide suitable for use in most parks, are being developed.

Alberta Recreation and Parks conducted a market survey to determine the supply and demand of facilities suitable for environmental education in Kananaskis Country. As a result of this survey, the Department decided to produce site specific resource materials to support existing operations, rather than build an environmental education centre.

Environmental education services are provided for school and youth groups who visit the Kananaskis Country area. There are three types of services: (1) personal instruction on an hoc basis for groups (as time and staff permit); (2) the development of environmental education resource materials to be provided to schools; and (3) the development of specific study units for grades one to six to be used by the nearby Mount Rundle School Division.

Since 1979, work has concentrated on the second area of service, by developing a "resource library" on the area. About 2500 pages of resource information, organized by topic and site, are housed in a portable, display case, or "drum". There are 44 separate elements in the collection, including 14 resource topic booklets providing a brief background to each subject area, using Kananaskis Country examples; and

28 site-specific study binders. It took about eight person-years to develop and produce the Kananaskis Country Environmental Education Library. It has not yet been seen or tested by teachers throughout the province. It will be distributed in 1985 to 40 school districts from Lethbridge to Edmonton. Workshops for teachers on its use are planned.

Specific learning units have already been produced for grades one and two and are being used by teachers in the Mount Rundle School Division. These focus on "families in nature", using local examples. Each study unit consists of a large, flat box containing story books, puzzles and large pictures. The grade three unit examines "communities", with emphasis on the forest community. Work is proceeding on the grade four unit on "towns and resources", including the mountain resources and history of the Canmore area. The grade five and six units are still in the planning stages.

Facilities

The Shannon Terrace Environmental Education Centre, located in Fish Creek Provincial Park in Calgary provides the opportunity for young students to participate in environmental programs. Twelve programs have been designed for use at Shannon Terrace. The Centre's coordinator provides on-site assistance, workshops and learning materials in support of these programs. From September to June 1983, 4000 students used the Centre.

E. The Environment Council of Alberta

The Environment Council of Alberta (ECA), formerly the Environment Conservation Authority, is a Crown corporation set up to assist government in environmental decision making. It has the mandate to review policies, programs, and existing and proposed activities relating to environmental conservation in Alberta. The Environment Council of Alberta supports a small "in-house" staff and several public advisory groups, composed of people from many sectors of society. These groups provide a mechanism for the public to contribute to the research and advisory function of the ECA.

The ECA fills an educational role by producing numerous reports on current environmental issues in Alberta. When requested by the Minister of Environment, it involves a wider public by conducting public hearings on specific issues. Information bulletins are prepared and distributed prior to the hearings. The ECA has set up information centres throughout the province, providing access to about 200 documents.

1. The Public Advisory Committee on the Environment (PAC)

In 1974, the Public Advisory Committee on the Environment (PAC), the largest ECA committee, recommended that the Minister of the Environment establish the "Alberta Environmental Information Exchange." The purpose of this agency was to provide accurate, unbiased

environmental information to the public. This recommendation had originated from an Alberta Environment consultant. The Department never implemented this suggestion.

The Public Advisory Committee on the Environment has noted matters relating to environmental education. A resolution passed at the 1979 joint meeting of the Public Advisory Committee on the Environment and the ECA stated: "BE it resolved that the provincial government develop educational programs and information outlets to make the public aware of the impact and consequences of existing urbanization trends and the range of urban form and settlement alternatives that are available to them."

In 1980, PAC began to distribute a quarterly newsletter to about 2,000 people, to keep them informed of the issues being addressed by the ECA study groups.

2. The Environmental Education Advisory Committee

Since the formation of the ECA in 1970, there has been a Public Advisory Committee on Environmental Education. In 1972, this committee set out to identify what was currently being done in environmental education in Alberta and what directions and initiatives could be pursued. The following year it concentrated on defining environmental education. No single definition was agreed upon but several elements were set down.

The Committee organized a provincial conference on environmental education for May 1974. The conference had three objectives: to provide a setting for the exchange of information among those interested in environmental education, to direct public attention to the importance of environmental education, and to provide a basis for future planning. A "state of the art" study was commissioned to form the basis for discussion at this conference. It focussed on the formal education system, provincial government departments and non-government groups.

About 220 delegates from a broad spectrum of agencies and organizations attended this conference. Its proceedings were published in December 1974. The conference generated 227 recommendations for further action. The Environmental Education Advisory Committee (EEAC) published a condensed version of these under five areas of concern: the environmental ethic, the role of government, the role of universities, teacher education and the role of the educational media. For reference, they are presented in "boldface type" in appropriate sections of this report. These recommendations were endorsed by the ECA and then brought to the attention of the authorities for implementation.

In 1975, the Committee membership completely changed and moved toward more "public" representation. The Committee set about to define its goals, mode of operation and possible future activities. It initiated followup on the 1974 conference. The membership structure was changed in 1979 to include six people, each representing one of the

Public Advisory Committee study groups. There were to be 12 others, drawn from the public at large.

In 1980, the EEAC published a role statement. "Its purpose is to advise the Council and the Government on matters of environmental education, to comment on environmental programs both within and outside of the formal education systems, and to assist in the formulation, development and implementation of such programs wherever possible."

During 1981 and 1982, the Committee was more active. It outlined an education strategy that would be appropriate to bring about public action on specific environmental issues. It then applied this to the issue of private sewage disposal. The result was an "action kit" which was assembled and distributed to members of PAC and Members of the Legislative Assembly for a pilot test. During this time two sub-committees were established: one, to meet with environmental education coordinators in government, and the other, to assess the status of environmental education in formal institutions.

F. Other Provincial Government Departments

Over the past fifteen years other government departments have increased their involvement in environmental education.

1. Alberta Agriculture

The 4-H program administered by Alberta Agriculture now involves about 8600 children from ages 10 to 21. There are several environment oriented projects that participants can work on within the regular club program. Three examples are: 1) the outdoorsman, emphasizing outdoor skills and environmental studies; 2) the pheasant rearing project; and 3) "Living with Wildlife", a project on wildlife management which was developed in cooperation with the Recreation, Parks and Wildlife Foundation of Alberta. There are other 4-H activities that are regional or provincial in scope. One is the the annual cleanup of about 6500 km. of highway. Over the past five years this has involved over 40,000 children. Each summer about 1000 members are selected to attend a number of camps which increase environmental awareness.

2. Alberta Energy and Natural Resources

Alberta Energy and Natural Resources has produced a number of environmentally related audio-visual presentations for television and use by groups.

The Alberta Forest Service

The Alberta Forest Service sponsors and administers the Junior Forest Warden and Ranger programs. These are environmental education programs focussing on forest resource management. The warden program,

with about 2000 members, operates year round through local clubs. The Ranger program is a summer experience for 16 to 18 year olds.

The Junior Forest Warden program is undergoing complete revision, reflecting the progression from awareness through to action that underlies contemporary environmental education programming in other sectors. Parts of it have already been tested, the rest is due to be piloted in 1985-86.

There has been an increasing trend towards integrating broader environmental concepts into these programs. For example, in 1984 the Rangers program was tied into the Federal Environment 2000 program. This included participation by forestry personnel who introduced the 144 participants to all aspects of forest management, from integrated planning to reclamation.

Fish and Wildlife Division

The Alberta Fish and Wildlife Division has offered the Alberta Conservation and Hunter Training Program since the early 1970s. Every year it attracts over 10,000 people from school children to adults. There is a network of volunteer instructors throughout the province.

The Division is preparing a program of instruction for K to 12 on wildlife management. "Project Wild" has been adapted for Canadian schools by the Canadian Wildlife Federation. The program has already been piloted by 30 teachers in Alberta and will be introduced into schools in 1985. Division staff plan to conduct inservice workshops to interested teachers. The Division will be printing an Alberta supplement in the spring of 1985. Alberta Education has formally approved this program as supplementary material.

Energy Conservation Branch

The Energy Conservation Branch of Alberta Energy and Natural Resources has developed school based programs, some involving class presentations by Branch staff. Others have been directed toward teacher inservicing and the development of curriculum support materials. The "Energy Sleuth Kit", in support of the grade six social science curriculum, has been a popular program. Publications and workshops for the general public have also been developed. The Branch lends out the "Energy/Environment Simulator", a computer exercise that allows students to observe the impacts of different energy use strategies on the global environment.

G. Municipal Governments

Several municipal governments in Alberta have given attention to environmental education.

1. Edmonton

In 1965, the City of Edmonton's Department of Parks and Recreation began outdoor nature programs and school walks. When the John Janzen Nature Centre opened in 1975, these activities were continued and adult programs added. Later Brownie and Cub badge sessions were started to meet demand. The John Janzen Nature Centre has attracted thousands of school classes and adults. Today it involves nearly 20,000 school children (mostly elementary), 5,000 Brownies and Cubs and nearly 75,000 other participants in programs and activities related to nature education. Programs for junior high school students are being contemplated.

2. Lethbridge

In Lethbridge, a network of volunteers, many of them members of the Lethbridge Naturalists Society, have conducted environmental education field trips for school classes and other groups since 1972. By 1979, support materials for grades three to six had been developed and a three-trip system adopted: a 15 minute introduction in the classroom, one hour in an undeveloped part of the schoolyard and a halfday visit to the nature reserve. Over 25 people have contributed to this program, with at least ten instructors each year. The number of volunteers continues to grow and so does the demand, especially from April through to June and again in the fall until early November. Winter programs are being prepared. Most requests are from teachers of grades 4 to 6 classes.

Lethbridge's Helen Schuler Coulee Centre was completed in 1982, with the financial assistance of the city's two school boards. It is located in the river valley Nature Reserve and draws thousands of participants for its school and other programs that are run primarily by volunteers.

3. Calgary

Since 1970, the City of Calgary has owned and operated the 77 acre Inglewood Bird Sanctuary and the historic Colonel Walker House within it. This area is open to the public and has been used for a wide range of natural history programs, for both adults and children. In 1984, 411 adults attended the 14 programs offered in the evenings and on weekends. There were 199 recorded bookings for use of the area, mostly for conducted walks. It is estimated that about 22,000 people visited the area in 1984. A full-time naturalist runs the organized programs and is responsible for overseeing activities in the sanctuary.

In addition, the Outdoor Nature Section of Calgary Parks-Recreaton Department has a full-time naturalist responsible for environmental education in the eight other natural areas of the city. The objective is to promote appropriate use and stewardship of these areas, through education rather than enforcement. This is done by: (1) direct programming to student groups; (2) teacher workshops and orientation sessions to the areas; and (3) developing teacher packages and pamphlets for each area. In 1984, 53 programs were conducted through this program; 26 directly, and 23 in cooperation with community organizations. Examples of the types of activities are: daily lectures and observation of the peregrine falcon nesting sites on the AGT tower in downtown Calgary, guided walks with the Calgary Field Naturalists Club, a lecture series at Fort Calgary directed at parents who want to teach environmental education to their children, and a wildlife "hot-line" (over 800 calls were received in 1984).

The Calgary Zoo, Botanical Gardens and Prehistoric Park has an extensive interpretive program. From June 15 to Labour Day it offers 32 on-site programs, 16 in the zoo and 16 in the prehistoric park. Each 15 minute presentation outlines environmental concepts and relates them to the subject at hand, whether it be an elephant or a model of a dinosaur. In the zoo, the emphasis is on habitats and extinction, while in the prehistoric park dinosaurs, geology and Alberta's past are highlighted. In both areas, the programs end with a conservation message. It is estimated that over 150,000 people experienced at least one of these programs in 1984.

In 1984, an estimated 12,000 school children also attended orientation programs conducted during school hours. For adults, the Zoo sponsors evening supper meetings, early morning tours and evening interest courses (such as wildlife photography). It organizes excursion tours to Dinosaur Provincial Park in Alberta; Churchill, Manitoba and Africa. The Zoo's education program is carried out by three full-time people, eleven seasonal interpreters and 90 volunteers.

4. Other Centres

The Urban Parks Program announced in 1979, has provided smaller urban centres with opportunities to include facilities that might be used for environmental education. The Medicine Hat facility attracts many people. Grande Prairie has hired an interpretive naturalist to develop and carry out an environmental program. Red Deer will soon embark on a similar program.

IV. THE NON-GOVERNMENT SECTOR

One of the recommendations from the 1974 Alberta conference on environmental education related to the government encouraging private sector responsibility for environmental matters and "more involvement of industry in environmental education." This section briefly outlines some activities undertaken by industry and non-government groups.

A. Industry

Over the past fifteen years some of the large resource industries have begun developing environment oriented public relations programs, through advertising and the production of films; and environmental education curricular materials.

Two Alberta-produced films available to teachers are "The Ultimate Forest", produced by Proctor and Gamble and "Energy Alert" by Transalta Utilities.

Since 1976, the industry-sponsored SEEDS (Society, Environment and Energy Development Studies) Foundation has been working toward encouraging "energy literacy" through the creation of original Canadian materials on energy and environment. A program of studies for grades one to twelve has been developed and implemented.

The SEEDS program began with grass roots participation. Sixty teachers in Alberta were involved in the initial development of materials, five working on each grade level. Through a number of conferences, SEEDS provided the opportunity for these people to communicate with "resource" people from all sectors of society; and to establish the scope, sequence and concept presentation for the entire program.

By January 1979, the basic development of the materials was complete. During the spring of 1979, these materials were pilot tested by about 133 teachers in Alberta and evaluated by a university evaluation team and an industry advisory committee. The pilot materials were significantly revised by four rewrite teams in the summer of 1979 and adapted for Canada-wide use. There are integrated four to six week units for Grades one to six , and units for incorporation into social studies or science curricula for grades seven to twelve. The cost of development of the SEEDS program was over $1 million.

SEEDS went to a large educational publishing house to print and market its materials, which include teachers' guides, student books and an optional audio-visual component. In Alberta, the cost of a teacher's guide, 30 student texts and audio-visual materials is about $120. It is available from the School Book Branch of Alberta Education.

To facilitate the use of these materials, there is a network of teachers across Canada to organize and conduct training sessions. In 1983, approximately 4,000 teachers attended these workshops, bringing

the number of educators who have been oriented to the materials to 8,000. SEEDS estimates that 150,000 students are using the materials.

Since 1980, SEEDS has been responsible for organizing and conducting the Shell Merit Fellowship program, a four week Institute at the University of Calgary sponsored by Shell Canada Resources Limited. The program includes field trips to various energy industry sites and presentations by over 60 speakers. Each program has been enthusiastically received by its 27 cross-Canada participants.

SEEDS has produced other materials useful in environmental education. These include an energy/environment bibliography and field trip guide for every province, posters and a quarterly newsletter that is mailed to 7000 subscribers across Canada.

B. Environmental Groups

Over the past fifteen years non-government environmental groups have been involved in environmental education in a variety of ways. Some of this has been in an advisory capacity to government and industry, while there have been numerous attempts "to get out there and do it". Here are a few examples of the types of activities they have undertaken.

In the early 1970s, a number of citizen action groups focussed on public environmental education. For example, an attitude survey conducted by the Edmonton Anti-Pollution Group in the early 1970s confirmed the need for education of the general public. In 1972, it published Sources and Resources - Resource Inventory Guide to Environmental Studies, a handbook which included a 21 page section on environmental education, as well as information on pollution sites in the city, resource materials and environmental organizations.

STOP (Save Tomorrrow, Oppose Pollution) was another Edmonton group that was active in promoting environmental education, through publicity campaigns and workshops with teachers. In Calgary, the Calgary Ecocentre, which operated from the late 1960s to 1982, was similarly involved in public education programs.

Many organizations have produced newsletters and other resources which have been directed beyond their own membership. One of the purposes of the Alberta Wilderness Association (AWA), for instance, is to provide the public with information on wilderness and wildlands in Alberta. The AWA has already published five books describing significant Alberta wildlands, and two more are being prepared. Those that have been published have been distributed free to all school libraries in Alberta.

Over the past ten years the Alberta Wilderness Association's newsletter has provided regular and thorough coverage of environmental issues. In 1983, about 4000 copies of each of its four issues were mailed to schools (free), MLAs and AWA members. The Association has also produced an audio-visual presentation on the value of wilderness

for free distribution to schools, and attempts to provide speakers whenever asked. Its office answers over 100 inquiries a month for environmental information. Two recent federal government grants have provided the Association with manpower to organize its resource centre into a library. It is getting increased use as it becomes better known.

The Federation of Alberta Naturalists'(FAN) Environmental Education Committee produced a 23 page nature activity guide for teachers, Activities for the Outdoor Classroom, in 1983, and distributed it to schools in Alberta.

Like many of the environmental groups in Alberta, Outdoors Unlittered educates by means of media attention it receives for its annual "Pitch-In" campaign.

A number of youth organizations and church camps have included environmental education as part of their programs. In 1974, regional and provincial workshops on outdoor education were held for Scouts and Guides.

The Edmonton YWCA's YoWoChAs Centre at Lake Wabamun began operation in 1981 with a strong environmental emphasis. Its purpose was to provide the opportunity for people to develop respect for themselves, others and the environment through environmentally sensitive programs and facilities. Use of the facility for outdoor recreation, outdoor education (school programs), environmental education training workshops, summer camps and other group uses has increased since 1982; from 2000 to almost 3000 annually. Currently it is occupied 200 days of the year. School groups account for almost 50 per cent of its users. There are four full time professional support staff.

The Yamnuska Centre near Calgary, operated by the YMCA since 1974 has offered programs for the public and more recently, the Calgary Public School Board. It is a winterized facility that provides accommodation for 140 people and access to over 1000 acres of a variety of terrains. During the school year it operates on a co-operative basis with the Calgary Board of Education, providing curriculum based programs, such as the "Sunship Earth" study program. Plans for future programs include the "Earth Keepers" winter program and an outdoor education program for junior high students. It is booked for about 33 weeks of the year for use by schools, with most sessions lasting three or four days.

During the summer, Yamnuska runs residential camps for about 1200 children. The Centre is also used on weekends by a variety of groups, such as for leadership training of high school students and adults.

Edmonton's Environmental Law Centre held two public education seminars, "Environmental Law - Making it Work for You" in 1983. The first was a series of presentations on legal considerations in environmental management. It was attended by 10 people. The second, a series of issue-oriented panels and was attended by 20 people. The Centre plans to expand its education programs to other parts of the province. Members of the Centre also give lectures to students in post-

secondary institutions and distribute a quarterly newsletter to 100 subscribers.

The Environmental Resource Centre in Edmonton produces a regular Network Newsletter that highlights events and information. This is distributed to 800 subscribers. It also produces information tabloids under service contracts with federal and provincial departments on topics such as hazardous wastes, pesticides and water management. The Resource Centre is part of the Edmonton Energy Conservation Centre, a demonstration and teaching facility for home energy conservation, which opened in February of 1985.

The Alberta Camping Association (ACA) has been involved with environmental education for over 15 years. One of the main objectives of the Association has been to provide annual training programs for camp operators and leaders. This has always included environmental considerations such as awareness and stewardship of the natural environment. At least one session on environmental education is held at the Association's annual conference. For the past ten years the ACA's Education Committee has been responsible for providing programs to the 75 member camps and other affiliated individuals. Six times a year it distributes a newsletter to over 200 people, often including articles on different environmental issues.

Several camps have been the sites of school-based environmental education programs. Near Calgary, Camp Horizon and Silver Creek Ranch were used in the 1960s and 1970s by the Calgary Board of Education. During the summer almost all camps in the province have an environmental education component in their programs.

C. Educational Organizations

The Banff Centre School of Management is the only place in Canada than has an active environmental management program for professionals from government, industry, non-profit organizations and educators. The School of the Environment was initially established at the Banff Centre in 1976 to provide programs that would bring people together to develop cooperative approaches to environmental decision making. It became the Resource Management Program of the School of Management in 1980.

A wide range of programs and conferences have been offered. This has included wilderness seminars; and workshops on public participation, legal aspects of resource development, conflict resolution, integrated resources management and native Canadian relations and resource development issues. In 1983, over 200 people attended its seminars and conferences. The proceedings from each of the four annual National Resource Conferences held at the Centre have been published by the University of Calgary Press for wider distribution. These contain papers on forestry in Canada, water policy for western Canada, institutional arrangements for water management in the MacKenzie River Basin and western Canada's food industry.

The Miniatik Hills Field Study Centre is a small, residential, non-profit environmental studies centre southeast of Edmonton. It began its field ecology study programs in 1972. The emphasis is on small group discovery of the life of different ecological communities. There is a laboratory, equipped with low-power microscopes. The director and three assistants conduct the programs. Courses are most popular in May and June, with a few groups coming in the Fall. Summer camps of a more recreational nature are usually held in July, using Hastings Lake, the nearby Waskahegan Trail, and the riding arena at the adjacent Community Hall and the Centre property.

The Wagner Bog Natural Area Association is developing and operating a protected area west of Edmonton, primarily for education purposes. It is the first natural area to be operated in such a way by a non-profit group.

VI. THE ROLE OF UNIVERSITIES AND COLLEGES

"To reflect the importance of environmental education in teacher preparation, Faculties of Education should develop courses to provide theory and practical experience in this field. Curricula should be inter-disciplinary.

University faculty members should be encouraged to exercise their role as social critics, bearing in mind the proposition that environmental education should be concerned with the relationships between science, economics, aesthetics, social morality and individual growth.

Universities should commit themselves to preparing, for ACCESS and other media agencies, programs in environmental education, in light of this broad concept of environmental education.

Universities should do everything possible to facilitate the offering of their services directly by faculty members to schools and other agencies running environmental education programs."

- Recommendations from the 1974 ECA conference on environmental education.

A. University Programs for Teachers

Because "environmental education" is not a specific school subject area, there is no environmental education program offered in the Alberta Faculties of Education. However, environmental education has been included in preservice courses in two ways. Firstly, it has been integrated into existing courses by individual instructors with particular interest in it. Secondly, separate courses have been given from time to time. For example, at the University of Alberta, "Environmental Education in the Secondary School" (Curriculum and Instruction Course 475) has been offered at least every two years. This course has no predetermined content and thus it varies with the instructor(s) responsible for it. In the summer of 1985, curriculum instruction integrated with mountain ecology (Ed. C.I 475) will be offered by the University of Alberta. This will include two weeks of field study out of the University of Calgary's Kananaskis Centre.

The Hunter Education course for instructors is often available at U of A in association with the secondary science program. It is a condensed program held at Narrow Lake, near the Town of Athabasca. Many graduates have found the instructor's certificate useful when applying for a teaching job, since the Hunter Education program is offered in many junior high schools as an "A" or "B" option.

In 1983, a pilot credit course in environmental education was offered at the University of Alberta. "Educating for Environmental Action" was developed and presented by the Elementary Education Department with financial assistance from Alberta Environment. It was designed to help experienced teachers develop a plan for involving children in an environmental issue, from selection and research through to action. Pre-action research and planning was done in the fall of 1982. From January to June 1983, the 12 teachers and their students carried out an action plan in their communities. Although evaluation of this course was generally favourable, there are no plans to offer it again at this institution.

During the last ten years a number of educators have pursued Masters programs concentrating on environmental education. These have been completed under the supervision of interested faculty members.

B. Professional Development for Teachers

In the past ten years, a number of credit courses have been given to teachers during the summer. Since 1975, five such programs have been offered at the University of Lethbridge, attracting up to 40 participants per session. These were seven to ten day interdisciplinary courses conducted by a team of specialized instructors.

In 1983, a two week "Nature as Classroom" course was offered at the University of Lethbridge by a faculty member and the Environmental Education Resources Branch head of Alberta Environment. The ten participants spent the first week doing field studies and the second week at the University, examining new trends (a similar program was also held for two years at the Blue Lake Centre).

At the University of Calgary, a credit course in environmental education was offered every summer from 1971 to 1983. "Environmental Studies in the School Curriculum" was a three week workshop in which teachers prepared instructional material for use in their classes. The course emphasized the local environment, but usually included an extended field trip. Enrollment averaged 20, but the numbers involved were as high as 40. In addition, "quarter credit" inservice courses were provided during the year to acquaint teachers with opportunities in the city.

C. Proposals for Environmental Education Programs at Alberta Universities

1. Tri-University Committee

In the late 1970s, the "Tri-University Committee on Environmental Studies" was formed to examine the need for coordination and formalization of environmental education among the three universities. The six members made their recommendations to the deans of education in 1977. They concluded that previous activities had taken place on an ad hoc basis: (1) in response to the needs of particular groups of

teachers, or (2) as an outcome of the interest and concern of particular faculty members. They concluded that no undue duplication had occurred. The committee recommended against establishing formal administration of environmental education in the university faculties because, "there is serious danger that institutionalizing environmental studies may serve only particular, narrow interests rather than those currently being met by the variety of activities."

The Committee made four major recommendations.

(1) Each university should establish an interdisciplinary committee to advise on the need for environmental education courses.

(2) Education faculty committees should be set up to advise students on careers and programs in environmental studies and education.

(3) A study should be done to determine the needs of various interested groups including those of practicing teachers, and where and how these needs could be met.

(4) The three Faculties of Education should present a proposal for such a study to the Interdepartmental Committee on Environmental Education (ICEE).

These recommendations were never acted upon. The Tri-University Committee was dissolved by the respective deans.

2. Credit Programming

In April 1983, a conference on Credit Programming in Environmental and Outdoor Education was held in Lethbridge to determine what should be done to facilitate recognition and coordination of environmental education at the university level, particularly as it related to teachers.

The 33 delegates who represented universities, colleges, government and the ATA concluded that no systematic, coordinated approach to environmental education for teachers existed in Alberta. They drew up a letter of intent to the Alberta Department of Advanced Education requesting Innovative Projects funding for a two and a half year project. This project would assess the needs of teachers and how programs to meet these needs could be organized.

The project outline identified four topics to be investigated: preservice education, professional development, coordination and consultation. Under preservice education, such aspects as majors (minors) programs, modules for prospective teachers, the integration of environmental education into existing courses and practica were to be addressed. Matters relating to professional development, such as inservice programs and courses, leadership development and credit transfer would also be researched. The ways and means of coordination among the four Alberta universities were to be identified. The project would be carried out in consultation with all those involved in

environmental education in Alberta and with information gathered from many sources.

Alberta Advanced Education rejected this proposal on the grounds that its focus was too narrow for an Innovative Project. As an alternative, they suggested that Alberta Environment and the post-secondary institutions consider developing a comprehensive environmental education program that would be delivered through a centre [of Environmental Education]. This was based on the existing model for consumer education in Alberta. Alberta Consumer and Corporate Affairs had worked with two community colleges to develop and deliver a comprehensive education program through a Centre for Consumer Education. Alberta Advanced Education, Alberta Environment and the University of Alberta are currently cooperating in the development of a credit program in environmental education.

D. Post Secondary Courses in Other Discipline Areas

Not everyone becomes a teacher. How are other university and college students exposed to environmental education? In Alberta, it has been incorporated into some university and college courses in other disciplines, at both the undergraduate and graduate levels. (A descriptive calendar outlining credit courses in environmental education offered by Alberta institutions is available through Alberta Environment's Environmental Education Branch.)

1. Undergraduate University Courses

At the University of Alberta, several instructors in the Recreation and Leisure Studies Department have integrated environmental education into their courses. The urban outdoor recreation, programming and counselling courses focus on environmental education concepts and values. Each of the three courses usually attract up to 25 students each term. In 1986, the Department is hoping to introduce an environmental ethics course.

Heritage (natural and historic) interpretation courses are offered jointly by the U of A's Faculty of Forestry and the Department of Recreation and Leisure Studies. Four courses; concentrating on principles, methods, planning and fieldwork are offered annually. Introductory biology courses, for non-majors have usually been multi-disciplinary in nature.

For a number of years the University of Alberta's Faculty of Extension has offered a natural history interpretation course (non-credit) on an ongoing basis.

2. Colleges

Mount Royal College in Calgary offers a two-year diploma program in environmental quality control. This technical program emphasizes the

evaluation and control of environmental problems. In 1983, an occupational hygiene technology program was introduced, dealing with the workplace environment.

Lethbridge Community College has a two year program in environmental studies.

3. Graduate Programs

The importance of integrating environmental concepts into professional programs has been recognized by the Faculty of Environmental Design (EVDS) at the University of Calgary. Established in 1971, this graduate faculty offers four different programs with a mandatory interdisciplinary core: environmental science, urban and regional planning, architecture and industrial design. A total of 225 students have graduated, over 80 in environmental science. The EVDS program is recognized as a well balanced professional practice degree program.

Since 1972, the University of Calgary's Faculty of Graduate Studies has granted 41 masters and three PhD degrees in interdisciplinary research, under the supervision of the Committee on Resources and the Environment.

VII. THE ROLE OF EDUCATIONAL MEDIA

"Such concerted action should also be taken to prepare relevant information and materials to be used by ACCESS and other media agencies in their programming outside the formal education system."

"Environmental education, in the holistic sense that takes into account the relationships between science, economics, aesthetics, social morality, and individual growth, should have the highest priority in educational communications in the Province.

"ACCESS should develop short one-minute informational programs for TV commercial time slots."

- Recommendations from the 1974 ECA environmental education conference.

In addition to numerous print materials, several environmental films and videotapes have been produced and/or acquired for use by environmental educators. Many of these are available from ACCESS Alberta, teacher resource centres, regional film libraries, or directly from the distributor (such as the National Film Board). ACCESS provides a free dubbing service for videotapes to those using them for educational purposes. Some teachers feel discouraged from using this service because of the "red-tape" involved.

The following ACCESS-produced materials have been widely used.

(1) E.Q.C The Way to Go (ten 15 minute programs for upper elementary students) presents the various signs of environmental quality (air, water, wildlife, energy, lifestyle etc.).

(2) Know Your World (eight 15 minute programs for grades four, five and six) guides students to examine various environmental aspects of their school yard.

(3) Renewable Society (seventeen 30 minute programs) examines the issues surrounding the usage of natural resources.

(4) Three Edukits consisting of slide/tape or video and print materials on specific areas of the National Parks, developed by ACCESS in cooperation with Parks Canada and Alberta Education. These are very popular in the spring.

Living Waters Edukit (six 15 minute programs) considers lake eutrophication in Elk Island National Park.

Bow Summit Edukit - High Mountain Life (five 15 minute programs) examines alpine ecology in Banff National Park.

Johnston Creek Edukit - Erosion by Water (four 10 minute programs).

(5) Energy Efficient Housing (twelve 30 minute programs co-produced with SaskMedia for a general audience) is a very popular series.

(6) Landscapes (seven 30 minute programs co-funded by Alberta Education and Alberta Recreation, Parks and Wildlife Foundation for a general audience) examines the landscapes of Alberta. Since March 1984 there have been 40 requests for the entire series.

ACCESS has acquired a number of environmental films, several in the natural science area. The following have been very popular.

(1) Ecology, You and Your Environment (seven 20 minute programs for grades four to seven) focusses on pollution and fosters a concern for a deteriorating environment.

(2) Man's Effect on the Environment (12 minute program for the hearing impaired).

(3) Resource Review 1979-1980 (four 30 minute programs) shows the relationship between the growth of B.C. and its resources, renewable and non-renewable.

(4) Life on Earth (twenty-seven 30 minute programs by the BBC for a general audience) examines the adaptive strategies developed during evolution in order for creatures to survive.

(5) Prairie and Alpine Habitats (sixteen 15-minute programs by Karvonen Films Ltd.) The first six in this series were produced to support the Alberta Education Flora and Fauna Kit.

Through the regional film centres there are about 100 to 150 titles relating to environmental education. There is increasing demand for video material. It also has potential for use by classes in doing environmental studies.

Alberta Environment produced three films in the past ten years, one on Alberta shorelands and the other two on hazardous wastes.

The ECA has made a film on the agricultural land use public hearings for use by interest groups.

VIII. POSTSCRIPT

This report has attempted to provide a description of some of the efforts made to further environmental education in Alberta over the past fifteen years. It was not intended to be an exhaustive review, but rather to provide examples and trends for people to use for further research, or for planning.

The historical reference for this report was an environmental education conference in 1974, out of which came numerous recommendations. These have been highlighted throughout the report, so that ready comparison could be made with what has happened since. Several recommendations appear not to have been accepted and acted upon. The most obvious of these relate to overall coordination and official endorsement of environmental education.

Although many efforts and programs have been documented, it was the consensus among those interviewed that there is lots more to be done. The viability and strength of environmental education will always depend on people themselves and their leadership. Whereas this document has attempted to outline the apparent happenings in environmental education over the past fifteen years, it has not addressed the issue of what impact all these efforts have had. How has it influenced the attitudes, lifestyle and actions of those exposed to it? Where do we go from here?

These are the real and challenging questions! It is hoped that they will be addressed; not left to haunt those who have devoted their lives to environmental education, or to deprive our children of valuable and meaningful experiences. For those involved, environmental education is not only good education, but crucial education; crucial to our survival and enjoyment of life on this planet.

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X. ACKNOWLEDGEMENTS

Environmental education in Alberta would be nowhere without the continuing interest and efforts of many people. Fifty-four have contributed directly to this report through interviews conducted during its preparation. They are acknowledged below. This brief examination of environmental education cannot do justice to the information, interest and enthusiasm they and countless others have generated during the past fifteen years.

DONNA BARGE (Principal, Idlywylde Elementary School, Edmonton) Donna has been an active environmental educator for over 15 years. She was the first treasurer of the EOEC, and from 1975 to 1980 edited the EOEC newsletter. Donna has also done many workshops for teachers privately and through Alberta Environment. She has continued to work directly with children, the ultimate recipients of all these efforts!

BILL BATYCKY (Program Specialist, Off Campus Activities, Calgary Board of Education) Bill was active in environmental education as a science teacher and department head before moving to his present position with the Calgary Board. He has been a Science Council executive member; committee member for the National Science Teachers Association; and is currently on the ECA Environmental Education Advisory Committee (EEAC) and a member of the Canadian Environmental Network.

BRAD BLOCKSIDGE (Elementary Teacher, Alberta Correspondance School, Barrhead) When he was a teacher in the County of Strathcona in the 1970s, Brad initiated environmental education programs. He was one of the "founding" members of the EOEC. During his four years in Medicine Hat, he initiated environmental and outdoor programs there. Brad received a Masters Education from the U of A, specializing in elementary environmental education. For the past two years he has organized a summer camp at the YOWoChAs Centre for grade five and six correspondence students.

PENNY BONNETT (Environmentalist and student, Nelson B.C.) In the early 1970s, Penny was active as a freelance researcher and writer, and "agitator" as she calls herself. During this time she authored two papers for Alberta Environment relating directly to environmental education: one on the Alberta Environmental Information Foundation (1973), and the other on the "Environmental Education Project" (1976) which set out the role and objectives for an environmental education coordinator within the Department.

BILL BRESNAHAN (Forestry Use and Social Development Branch, Alberta Forest Service, Alberta Department of Energy and Natural Resources) Bill was head of the Outdoor Recreation Section of Alberta Recreation and Parks from 1975 to 1979.

JENNIFER CLARK (Fish and Wildlife Division, Alberta Energy and Natural Resources) Jennifer is working on the introduction of "Project Wild" into Alberta schools.

ALLAN CROOKE (Environmental Education Coordinator, Recreation Programs Branch, Visitor Services Section, Kananaskis Country Division, Alberta Recreation and Parks) Allan came to Alberta from the United States, where he had taught high school before studying for a masters in environmental education and interpretation in the mid-1970s. He worked as a seasonal interpretor in Bow Valley Provincial Park in 1978 before assuming his responsiblities as environmental education coordinator for the Kananaskis Country area in September 1979.

BURT DEMERIEZ (Program Coordinator, Bennett Environmental Education Centre, Edmonton Public School Board) Burt has been involved in environmental education for many years. He began as a high school teacher at Victoria Composite High School in 1959 and moved to Bonnie Doon High School in the late sixties to become the physical education department head. In 1970, he became outdoor education coordinator for the Edmonton Public School Board.

GRAHAME DOHERTY (Energy Conservation Office, Calgary Public School Board) In the early '70s, Grahame organized week long field trips for his geography students at Queen Elizabeth School in Calgary. He also co-authored the energy literacy program for K to 12 adopted by the Calgary Board. He received a Masters in Education, concentrating on environmental education, from the University of Calgary. He has also been a EOEC executive member and is currently on the EEAC of the ECA.

JOHN EDWARDS (Science Teacher, Sir James Lougheed Elementary School, Calgary) John has been involved in environmental education since the Calgary Board started its outdoor school in 1967. He has been an active member of the Elementary Science Council of the Alberta Teachers' Association and the Calgary Regional Science Council. He has conducted many teacher workshops. More recently, he has assisted with the development and piloting of a waste management program sponsored by Alberta Environment.

CARL ELLINGSEN (Cedarbrae School, Calgary) Carl has worked in environmental education for over ten years, as an interpreter with Parks Canada, as a consultant for five years for the Calgary Elementary Outdoor School and as the nature education coordinator for Edmonton's John Janzen Nature Centre. He is a "workshopper" for Alberta Environment and Project Wild. He has been president of the EOEC.

DAVID ELPHINSTONE (Naturalist-Ranger, Natural Areas Program, City of Calgary) David has worked as a naturalist in the City of Calgary for the past ten years, including four years as the field naturalist at the Inglewood Bird Sanctuary and one year as chief naturalist at Fish Creek Provincial Park.

LOIS FENNA (Director, Ministik Hills Field Study Centre) After practicing medicine in the UK and Australia, Lois came to Canada and graduated from the U of A with a M.Sc. in ecology. She and her husband bought a derelict farm south of Hastings Lake and converted it into a residential field centre for environmental education, starting in 1972, while running a small cattle operation.

JOY FINLAY (Educator and Interpretive Planner and Coordinator of the Teacherage, a teachers' resource centre of the Edmonton Public School Board) Joy's interest stems from her training as a naturalist and teacher. In 1967, she worked for Edmonton Parks and Recreation to promote the use of the city parks by schools and community groups From 1973 to 1980, she was employed as an outdoor and environmental education consultant for the Edmonton Public School Board. In the 1970s, she completed an elementary environmental education masters program at the University of Alberta. Joy has produced dozens of materials and conducted hundreds of workshops. She was one of the "founding" members of the EOEC and has sat on the EEAC for a number of years.

JEAN FUNK (Outdoor and environmental education consultant) Jean's involvement in environmental education has been in the non-government sector. During the 1970s she was with the YWCA in Edmonton, and was responsible for the construction and program development of the YoWoChAs Centre, a residential facility at Lake Wabamun. She is currently revising the Junior Forest Warden program for the Alberta Forest Service. Jean is past president of the Alberta Camping Association and currently chairs the Environment Committee of the Canadian Camping Association.

BERNIE GALBRAITH (Supervisor of Science, Edmonton Public School Board) Bernie has been involved in environmental education for many years, initially as an elementary teacher in the Edmonton Public system; and in the last eight years in curriculum work, as a consultant and now as a supervisor. He has held several EOEC executive positions, including president, first vice president, conference director and publications director. During these tenures he initiated a number of publications and the "Resource Centre on Wheels", and worked on curriculum development with Alberta Environment.

JUDY GRIMSRUD (Information Officer, ACCESS Alberta) Judy provided information on environmental films produced and acquired by ACCESS.

ELIZABETH HALL (Naturalist and Lethbridge City Alderman) Liz is no stranger to environmental education. For over twenty-five years she has been active in the Girl Guides of Canada. Liz was active in proposing, developing and implementing the Helen Schuler Nature Centre in Lethbridge and in organizing a system of volunteers to instruct at the Centre.

KEITH HARRISON Keith has been the ATA staff person assigned to the EOEC since 1978.

REG HOUGHTON (Principal of Keeler Elementary School, Calgary) Reg has been with the Calgary Board since the mid 1960s. He was responsible for the Elementary Outdoor School as supervisor of elementary science, and later as supervisor of off-campus activities. He was Environmental Education Coordinator for Alberta Education from 1981-1983, during which time he compiled the Environmental Education Manual and Catalogue.

ANNE ISSACS (Program Coordinator, Regional Parks System, Victoria, B.C) Anne came to Alberta in 1976, having completed a masters in the field of environment and behaviour. She worked for the Parks Division of Alberta Parks and Recreation as an Environmental Education Coordinator. Her responsibilities included: writing the environmental education plan for each new park, development and delivery of environmental education programs in the parks, communications and liaison with othe government departments, the EOEC and the public. She edited the Green Plants units, with Alberta Environment's Susie Washington. Anne was interested in providing opportunities for disabled users of the parks system.

PUNCH JACKSON (Outdoor Recreation Branch, Recreation Development Division, Alberta Recreation and Parks) Punch has been with the Department since 1979 and during that time has been responsible for the distribution of funds to outdoor recreation associations, programming at Blue Lake and other cooperative environmental education programs.

DAWNA JONES (Acting Director, Communications Branch, Canadian Forestry Service, Agriculture Canada) Dawna was a teacher in the County of Strathcona in the 70s and was active in environmental education with her own students and local teachers. In the late 1970s, she travelled around the world, visiting environmental education centres and projects in New Zealand, Australia, Asia and Africa. From July 1980 to July 1981, she worked on a market analysis project for Alberta Recreation and Parks, to determine the demands for environmental education sites and facilities within the parks system.

BRIAN KEATING (Director of Education, The Calgary Zoo, Botanical Gardens and Prehistoric Park) Brian has been with the Calgary Zoo for three years. Before coming to Calgary, he worked as a biologist with the Canadian Wildlife Service in southern British Columbia and southern Saskatchewan.

NESTOR KELBA (Supervisor of Off-Campus Activities, Calgary Board of Education) Nestor has been involved in environmental/outdoor education for many years. In the 1960s, he was employed as a physical education consultant and became Principal of the Outdoor School in 1966. During the 1970s Nestor completed a masters of science thesis on evaluation of outdoor residential schools. He was also president of the ATA Physical Education council. From 1975 to 1980, he was employed as assistant supervisor of physical education for the CBE. He is curretly the EOEC president and is past president of the Alberta Camping Association.

JOHN KINNAIRD (Math and Science Teacher, Barrhead Elementary School) John has been involved in environmental education since the early 1970s. He was a member of the first Environmental and Outdoor Education Council of the ATA. For the past eleven years he has organized the environmental education program for grade six students of the County of Barrhead.

LOU LANIER (Professor, Department of Recreation and Leisure Studies, University of Alberta) Lou's interest in environmental education stems from his university studies in physical education and outdoor recreation. In 1978, a major curriculum change in his academic Department opened the way for the introduction of outdoor recreation courses with emphasis on environmental and heritage interpretation. Since then he has been teaching several of the interpretation courses offered.

KEN LOWE (Director of the Action Studies Institute, Calgary) The Action Studies Institute is a private, independent research organization focussing on social action. Ken is involved in researching and designing instructional systems in formal and non-formal education. He has worked in acclimatization programs aimed at developing a more integrated approach to learning.

COLIN LUMBY (Associate Professor of Physical Education, University of Calgary) Colin has been involved in the Alberta Camping Association for the past 15 years, mostly on the Education Committee, of which he is now vice president. He has also helped to organize numerous EOEC conferences. He was outdoor education coordinator of the short-lived Canadian Association for Health, Physical Education and Recreation.

MERVYN LYNCH (Science Supervisor, Edmonton Catholic School District)

JOHN MAREAN (Retired Professor of Education, University of Calgary) John was a guiding light for environmental education at the U of C. Every summer he taught a credit program for teachers, often focussing on the urban environment. He has conducted or assisted with many other environmental education courses and workshops over the past ten years. He was chairman of the Tri-University Committee that examined the need for environment-oriented courses at the university level.

JIM MARTIN (Head of the Environmental Education Branch, Alberta Environment) As an elementary and junior high teacher, and administrator in northeastern Alberta, Jim was involved in environmental education. He organized regional workshops through the Lakeland Regional Council of the EOEC, and he has also been an executive member of the EOEC. Jim has been with Alberta Environment since 1982.

DON MASSEY (Professor, Department of Elementary Education, Faculty of Education, University of Alberta) Don has supervised five graduate students who have worked on elementary environmental education.

RICK MATISHAK (Former Director of the YoWoChAs Centre) Rick was director of this Centre from May 1981 to February 1985. Prior to this, he worked with delinquent youth in wilderness settings.

ERIC MOKOSCH (Dean of Education, University of Lethbridge) Eric has been a promoter of environmental education at the U of L for many years. Under his direction, there have been several inservice summer

courses. He has encouraged people from outside the university to address education classes regarding environmental education. He has served on the Alberta Education science curriculum coordinating committee, and the Tri-University Environmental Education Committee.

RICK MRAZEK (Test Development Specialist, Student Evaluation Branch, Alberta Education) Rick is a graduate of the U of L and taught science and outdoor education in the Lethbridge area. He is working on a PhD in education examining the Canadian context for science education. He has been a sessional lecturer at both the U of L and U of A in science and outdoor education, and has assisted in several inservice courses, including "Nature as Classroom". He has been on the executive of the EOEC.

KEN NELSON (Communications Officer, Environment Council of Alberta) Ken has been the ECA staff person associated with the Environmental Education Advisory Committee since 1978.

LLOYD PEARCE Science Fieldstudy and Secondary Science Consultant, Edmonton Public School Board) Lloyd has worked for the Edmonton Board as a teacher, science coordinator and more recently as a full-time consultant. In 1973, he started a junior high school field program that has since expanded to involve 35 of 45 junior high schools in Edmonton. This expansion has included the preparation of site specific materials for 12 programs, some of them in the life and earth sciences.

WAYNE PERKINS (Manager of the Rocky Mountain YMCA, Calgary) Wayne began his career as a teacher in Saskatchewan before working as director of camping for the Hamilton YMCA in the 1970s. He has been in his present position since 1980. Wayne is the president of the Alberta Camping Association, and on the executive of its national counterpart.

VIVIAN PHARIS (President of the Alberta Wilderness Association) Vivian was a high school biology teacher for a rural Alberta school division for ten years in the late 1960s and 1970s. She is currently an active environmentalist, devoting most of her time to the Alberta Wilderness Association.

HUGH PHILLIPS (Program Director, SEEDS FOUNDATION, Edmonton) Hugh taught in the St. Albert Protestant Separate School System for six years. During that time he and two other teachers organized and ran an outdoor education program that at its peak involved 2500 students. He was a founding member of the EOEC and was also an active executive member during the 1970s. Since 1979, Hugh has been with SEEDS, through its development and distribution phases. He has travelled to seven other provinces to speak or give seminars on environmental education.

GARRY POPOWICH (Associate Director of Curriculum, Alberta Education) Garry has been involved in environmental education since 1970. He was a teacher with the Edmonton Public School Board until July of 1974 when he left to become an educational (science) consultant in Red Deer for five years.

WALLIE SAMIRODEN (Associate Professor in Secondary Education, University of Alberta) Wallie has been with the Faculty of Education since 1975. He has organized a number of courses in environmental education. He has also been on the Alberta Education Biological Bciences Ad Hoc Curriculum Committee and the Tri-University Environmental Education Committee.

GEORGE SHAW (Principal, J.T. Foster School, Nanton, Alberta) George was the outdoor and environmental education specialist for the Calgary Board of Education from 1974 to 1981. He was involved with the operation of the Calgary Elementary Outdoor School, inservicing for teachers and introducing environmental education to students. He was one of the founders of the EOEC. During the past ten years, he assisted in several summer inservice programs at the U of C and U of L.

RAY SLOAN (Coordinator of the Environmental Quality Control Program, Mount Royal College, Calgary) Ray has been at the College since 1970. He has been active in the Alberta Wilderness Association, as president and a director. He has been chairman of the Environmental Education Advisory Committee of the Environment Council of Alberta and currently serves on the Pollution sub-committee of the Public Advisory Committee of the ECA.

EMMETT SMITH (Manager of Parks and Recreation, City of Saskatoon) Emmett is the former Assistant Deputy Minister of Alberta Recreation and Parks. He was responsible for the administration of Outdoor Education funds to school jurisdictions in the late 1960s and 1970s. The planning and construction of Blue Lake Centre also occurred during his tenure.

DAN STOKER (Energy Conservation Branch, Alberta Energy and Natural Resources) Dan was hired as Alberta Environment's first Environmental Education Coordinator in 1976 and worked with the Department until 1979. He pioneered several projects and workshops with teachers during that time, which inspired many to introduce environmental education to their students. In his present position he is responsible for educational programs.

BRIAN STASZENSKI (Executive Director, Alberta Environmental Resource Centre, Edmonton) Brian has been active in the environmental movement in Alberta for many years. He is the past president of the Alberta Wilderness Association.

DIANNA THOMPSON (Environmental Education Coordinator, Visitor Services Branch, Operation and Maintenance Division, Alberta Recreation and Parks) Since she came into this job in 1981, Dianna has been responsible for coordinating the environmental education program within the visitor services programs for parks (including the development of learning resources manuals for specific parks within the system), and completing marketing research and planning of environmental education programs.

DIXON THOMPSON (Professor of Environmental Science, Faculty of Environmental Design, University of Calgary) Dixon has been with the Faculty for 11 years. He is chairman of the Science Advisory Committee

of the Environment Council of Alberta and has had a long standing association with the ECA. His major area of interest is natural resources management, especially that of water resources.

BOB TOWNSEND (Vice Principal, George Davison Elementary School, Medicine Hat) Bob has been involved in environmental education for more than twenty years, as a participating teacher and camp manager for the Cypress Hills program. In addition to his "regular" teaching job, he is now responsible for organizing and running the annual camp at Cypress Hills for his school and others in the Medicine Hat area. He was a member of the original EOEC council.

MIKE WALTERS (Director, Yamnuska Centre) Mike has been involved with the Yamnuska Centre for about ten years as a full-time instructor and assistant director. He is an associate of the Institute for Earth Education, which promotes acclimatization programs.

SUSIE WASHINGTON (Program Manager, Resource Management Program, The Banff Centre School of Management) Susie was Alberta Environment's Environmental Education Coordinator from 1979 to 1981. During this time she expanded the workshops for teachers, developed new units of instruction and carried out public education programs.

ELIZABETH WEBSTER (4H Branch, Alberta Agriculture)

BOB WESTBURY (President of the SEEDS Foundation, Edmonton) Bob was Director of Curriculum for the Edmonton Catholic School Board in the 1960s and 1970s. During that time he was interested in developing units for outdoor education, especially winter activities. Bob has been with SEEDS since its inception eight years ago. He has been a member of the Environmental Education Advisory Committee of the Environment Council of Alberta since 1979, and served as its vice-chairman in 1981-82.

JOE WILL (Director of Public Relations, Trimac Corporation, Calgary) Joe was Alberta Environment's Director of Communications from 1971 to 1980. He was responsible for a number of environmental education "firsts" in government: an environmental education coordinator position was created in 1976; teacher workshops, environmental information and study units were developed and distributed, and Environment Views, a bimonthly magazine that examines environmental issues from a variety of perspectives began in 1978. All of these efforts have continued to expand in scope and impact.

WARREN WISMER (Marketing Services Division, Alberta Agriculture) Warren was with Alberta Environment during the 1970s, in the Organization Development Division. He provided much moral and philosophical support to the efforts of the Communications Branch during his employment in Alberta Environment. He was the chairman of the Interdepartmental Committee on Environmental Education (ICEE) and authored a report (1977) on behalf of that committee.

XI. OBTAINING ENVIRONMENTAL EDUCATION RESOURCES AND INFORMATION

The following list might be a useful start for those interested in obtaining further information or contacting people presently involved in environmental education.

Alberta Agriculture. Home Economics and 4H Division. 7000 - 113 Street, Edmonton, Alberta T6H 5T6 (427-2409) (Communications Division-427-2127)

Alberta Camping Association. 332-6th Avenue S.W., Calgary T2P 0R5 (269-6156)

ACCESS Network. 16930 - 114 Avenue, Edmonton, Alberta T5M 3S2 (451-7237)

Alberta Education. Curriculum Branch. 3rd Floor, 11160 - Jasper Avenue, Edmonton, Alberta T5K 0L2 (427-2982)

Alberta Energy and Natural Resources. Alberta Forest Service. Program Support Branch 9920 - 108 Street, Edmonton, Alberta T5K 2C9 (427-2545)

Alberta Energy and Natural Resources. Fish and Wildlife Division. 9945 - 108 Street, Edmonton, Alberta T5K 2C9 (427-6757)

Alberta Energy and Natural Resources. Energy Conservation Branch. 2nd Floor, 10010 - 106 Street, Edmonton, Alberta T5J 3L8 (427-5200)

Alberta Environment. Environmental Education Branch. 9820-106 Street, Edmonton, Alberta T5K 2J6 (427-6310)

NOTE: The Branch has published Environmental Education Government Services for Teachers and Leaders. and Environmental Fact Seekers Guide.

Alberta Recreation and Parks. Recreation Programs Branch. 10405 - Jasper Avenue, Edmonton, Alberta T5J 3N4 (427-9429)

Alberta Recreation and Parks. Visitor Services Branch (Parks). 10405 - Jasper Avenue, Edmonton, Alberta T5J 3N4 (427-9429)

Alberta Teachers' Association. Environmental and Outdoor Education Council 11010 - 142 Street, Edmonton, Alberta T5N 2R1 (453-2411)

Alberta Wilderness Association. Box 6398, Station D, Calgary, Alberta T2P 2E1 (283-2025)

The Banff Centre School of Management Reource Management Program. P.O. Box 1020, Banff, Alberta T0L 0C0 (762-6137)

Calgary Board of Education. Off-Campus Activities Office. 2519 - Richmond Rd. S.W., Calgary, Alberta T3E 4M2 (294-8657)

The Calgary Zoo, Botanical Gardens and Prehistoric Park. Box 3036, Station "B", Calgary, Alberta T2M 4R8 (265-9310)

The City of Calgary. Parks-Recreation Department. Natural History Services-71. P.O. Box 2100, Station "M", Calgary, Alberta T2P 2M5 (268-5211)

The City of Edmonton. Parks and Recreation Department. P.O. Box 2359, Edmonton, Alberta T5J 2R7 (428-3559) (John Janzen Nature Centre: 434-7446, Donald Ross Outdoor Centre: 428-3033, Rundle Family Centre: 471-3232)

Edmonton Catholic (Separate) Schools. Science Supervisor. 9807 - 106 Street, Edmonton, Alberta T5K 1C2 (422-6376)

Edmonton Public School Board. Bennett Environmental Education Centre. 9703 - 94 Street, Edmonton, Alberta T6C 3W1 (468-1438)

Environment Council of Alberta. (Public Advisory Committee on the Environment and the Environmental Education Advisory Committee) 8th Floor, 5555 Calgary Trail, Edmonton, Alberta T6H 5P9 (427-5792)

Environmental Law Centre. 411 - Revillon Building, 10233-104 Street, Edmonton, Alberta T5J 1B2 (425-6740)

Environmental Resource Centre. 10511 Saskatchewan Drive, Edmonton, Alberta T6E 4S1 (433-8711)

Ministik Hills Field Study Centre. Box 213, Tofield Alberta T0B 4J0 (662-2280)

Mount Royal College. 4825 - Richmond Rd. S.W., Calgary, Alberta T3E 6K6 (420-6182)

The SEEDS Foundation. #406 - 10169 - 104 Street, Edmonton, Alberta T5J 1A5 (424-0971)

The University of Alberta. Faculty of Education. Edmonton, Alberta T6G 2H9 Department of Secondary Education: 432-3674, Elementary Education: 432-4273

The University of Calgary. Faculty of Environmental Design. 2500 University Drive, Calgary, Alberta T2N 1N4 (284-6605)

Yamnuska Centre. Rocky Mountain YMCA Seebe, Alberta T0L 1X0 (673-3858)

YoWoChAs Centre. Box 313, Fallis, Alberta T0E 0V0 (423-3811)